

EXPERIMENTAL MICROHABITAT CHOICE IN *PSEUDICIUS PIRATICUS* (ARANAE: SALTICIDAE)¹

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ABSTRACT: In a substrate-choice test arena, individuals of *Pseudicius piraticus* spent significantly more time on branches than on leaves of mesquite. This is in concordance with field-collecting information, i.e., beating mesquite produces more individuals than sweeping mesquite. Female and immature coloration closely resembles the color of mesquite branches and is probably cryptic.

The jumping spider, *Pseudicius piraticus* (Peckham and Peckham), is found on shrubs and trees in the southwestern United States and northern Mexico. This species does not belong in the genus *Pseudicius*, but in a genus related to *Marpissa*. Correct placement will result from a future revision. Individuals of this salticid spider are abundant in southern New Mexico on mesquite, *Prosopis glandulosa* Torr. While collecting specimens, it was noted that sweep netting produced relatively few *P. piraticus*, whereas beating garnered larger numbers. Three antepenultimate and two penultimate specimens from the vicinity of Las Cruces, Doña Ana Co., New Mexico were kept alive in the laboratory and tested with the substrate-choice arena shown in Figure 1. Spiders were released onto the sand and observed for 30 min. The total time spent on each of the possible substrates in the arena was noted. Three repetitions were done with each spider over three consecutive days. Pooled results are shown in Table 1. A Chi-square test indicated significant difference ($P < 0.005$) from expected time at each location. Although not presented here, the same test for each individual spider was also significant at $P < 0.005$. Thus, the hypothesis that all substrates were equally attractive is rejected. Much more time was spent on the branches than on any other individual substrate.

There has been essentially no experimental work on microhabitat choice in Salticidae. Almost all that we know about habitat preferences in this family comes from field-habitat associations noted on museum specimen labels, or from ecological studies about such associations, but not directly concerned with habitat choice [see such papers as Dondale (1961) and Drew (1967)]. Similarly, experimental data is lacking for other non-snare-building spiders (Cutler *et al.* 1977, Greenstone 1980, Jen-

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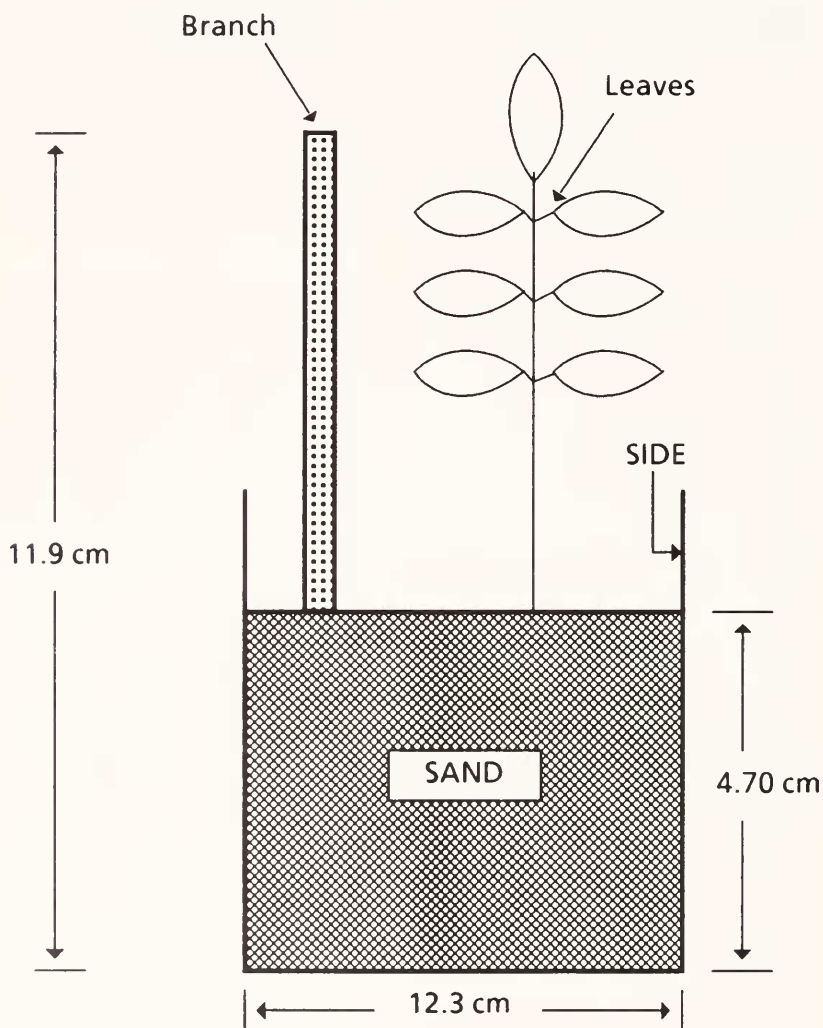


Fig. 1. Diagram of substrate-choice arena used to test *Pseudicium piraticus*.

nings 1971, Lowrie 1973). Greenquist and Rovner (1976) studied responses of two *Lycosa* species and two *Schizocosa* species (Lycosidae) to three types of artificial leaf structures constructed out of cardboard. They found differences among the species in time spent on the foliage vs. on the ground, as well as on the different "leaf" types.

As for *P. piraticus*, the experimental results coincide with field observations, i.e., that beating, which shakes limbs, is more effective than sweep netting, which primarily samples foliage. When mature, *P. piraticus* is about 7 mm long with an elongated, flattened body. Females and immatures of this species are cryptically colored with a heavy grey, white, and black vesture of scales. Males are striking, being predominantly black with a white central stripe. The cryptic coloration of the females and immatures matches the coloration of mesquite branches so well that immobile individuals are very difficult to detect even when their general location on the branch is known.

Table 1. Time spent (in minutes) in residence on locations in test environment by five *Pseudicius piraticus*.

	Branch	Leaves	Sand	Side	Total
Actual time	289	73	62	26	450
Expected time	112.5	112.5	112.5	112.5	450

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